

ABSTRACT OF THE DISCLOSURE

A radiological imaging apparatus of the present invention includes an X-ray source for emitting an X-ray, a  $\gamma$ -ray detecting section for outputting a detection signal of a  $\gamma$ -ray, and an X-ray detecting section for outputting a detecting signal of an X-ray. The X-ray source moves around a bed for placing an examinee. The  $\gamma$ -ray detecting section has a plurality of radiation detectors aligned in the longitudinal direction of the bed and placed around the bed. The X-ray detecting section is positioned in a region formed between one end and the other end of the  $\gamma$ -ray detecting section in the longitudinal direction of the bed. The X-ray source is also positioned in the region. Since the X-ray detecting section is placed in the region, it is possible to accurately combine a PET image and an X-ray computed tomographic image.